

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007037**Date Inspected:** 14-Feb-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei / Sun Bo**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Components**Summary of Items Observed:**

The Caltrans (CT) Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

**OBG Sub-Assembly Bay 12:**

The QA Inspector randomly observed ZPMC welding personnel performing heat straightening operations to reduce weld induced distortion from welding the T=35 mm thick I-Ribs to Deck Plate 1AE-DP585-001 at Complete Joint Penetration (CJP) Weld Joint (WJ) Numbers 009, 011 and 013. 1AE-DP585-001 is placed upside down with heat being applied to the underside of the base plate on Deck Plate 1AE-DP585-001. The QA Inspector randomly observed that jacks (passive) were in place between the I-Ribs, but no counter weights. This work was being performed in accordance with ZPMC Heat Straightening Request (HSR), HSR (B)-258 Rev. 0.

The QA Inspector randomly observed 1 ZPMC helper utilizing a pencil grinder to blend the copes after weld repairs, in the T=35 mm I-Ribs at the U-Rib ends on Deck Plate 1AE-DP590-001.

The QA Inspector randomly observed ZPMC welder Liu Xie ID 066236, utilizing the Flux Cored Arc Welding (FCAW) Process in the 1G/1F (Flat Groove/Flat Fillet) Positions, with ZPMC Weld Procedure Specification (WPS) WPS-345-FCAW-1G (1F)-Repair to weld a R3 repair to WJ 009 attaching a T=35 mm I-Rib to the base plate of Deck Plate 1AW-DP565-001, per ZPMC Critical Weld Repair (CWR) B-CWR323. 1AW-DP565-001 is placed in a jig to allow for the welding to be performed in the 1G position. The QA Inspector randomly observed

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ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 292 amps, 31 volts with a travel speed of 376 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Lu Liang ID 059373, utilizing the Gas Metal Arc Welding (GMAW) Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2342-U5 (U-Rib) to tack weld the U-Rib Extensions to the base plate of Deck Plate 1AE-DP565-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Hao Long ID 059446, utilizing the GMAW Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2342-U5 (U-Rib) to tack weld the U-Rib Extensions to the base plate of Deck Plate 1AE-DP590-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed a ZPMC welder utilizing the Carbon Air Arc Gouging (CAAG) Process to excavate and remove rejects in the welds attaching the T=35mm I-Ribs to the base plate on Deck Plate 1AW-DP570-001 at WJ's 012, 014, 016 and 018. These areas had been previously marked by ZPMC Non-Destructive Testing (NDT) Technicians after performing Ultrasonic Testing (UT) on the above listed WJ's.

The QA Inspector randomly observed ZPMC welder Liu Xie ID 066236, utilizing the FCAW Process in the 1G/1F (Flat Groove/Flat Fillet) Positions, with ZPMC WPS WPS-345-FCAW-1G (1F)-Repair to weld a R3 repair to WJ 009 attaching a T=35 mm I-Rib to the base plate of Deck Plate 1AW-DP565-001, per ZPMC Critical Weld Repair (CWR) B-CWR323. 1AW-DP565-001 had been flipped and placed on the opposite side of the jig to allow for the welding to be performed in the 1G position on the other side of WJ 009. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed 1 ZPMC helper utilizing an angle grinder, to clean out excavations after CAAG operations, on the welds attaching the T=35 mm I-Ribs to the Base Plate on Deck Plate 1AW-DP540-001 at WJ's 009, 011 and 013. The work was being performed in accordance with ZPMC CWR's B-CWR327, B-CWR328 and B-CWR329 for R3 repairs.

The QA Inspector randomly observed ZPMC welder Yang Yong Zeng ID 059418, utilizing the FCAW Process in the 2G/2F (Horizontal Groove/Horizontal Fillet) Positions, with ZPMC WPS WPS-345-FCAW-2G (2F)-Repair to weld repairs to U-Rib to base plate WJ's on Deck Plate 1AW-DP570-001 at WJ's 030 and 031. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Han Si Qi ID 202842, utilizing the FCAW Process in the 2G/2F (Horizontal Groove/Horizontal Fillet) Positions, with ZPMC WPS WPS-345-FCAW-2G (2F)-Repair to weld repairs to the welds attaching a T=35 mm I-Rib to the base plate of Deck Plate 1AE-DP595-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

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Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

### Summary of Conversations:

No relevant conversations.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 150-0042-2372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Franco,Charlie	Quality Assurance Inspector
<b>Reviewed By:</b>	Clifford,William	QA Reviewer

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